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ABSTRACT

A demonstrated model for effective instructional skill improvement in the medical clinical sciences is described. A two-year project was funded by the National Fund for Medical Education to design and implement a program to assist house staff in the improvement of clinical instruction. A total of 148 medical residents were surveyed about their attitudes toward skill improvement, their own perceived instructional strengths and weaknesses, and time commitments given to specific clinical activities in their jobs. The five-week program that followed involved 20 students (self-selected) in 20 hours of independent and group study. The residents were videotaped in a typical clinical teaching session as a pretest. A participant guide is given to the residents in a first group meeting. In the second week, microteaching is introduced. Subsequently, an observation and rating technique is presented to aid the residents in becoming skilled observers of teaching techniques. The residents then participate in two 10-minute microteaching experiences that reviewed by themselves, the faculty, and fellow residents in the program. The overall objective of the program was to increase each resident's awareness of the importance of his teaching role, and the results are seen as encouraging. (MSE)

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# A HOUSE STAFF TRAINING PROGRAM TO IMPROVE THE CLINICAL INSTRUCTION OF MEDICAL STUDENTS

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## Introduction

A House Staff Training Program designed to examine clinical teaching skills and strategies and to improve the clinical instruction of medical students was funded by The National Fund for Medical Education for a two year period that began July 1, 1974. The primary goal of this project was to develop and implement a program through which house staff would become more effective clinical teachers. Through the coordinated efforts of residents in three clinical areas, namely, Medicine, Pediatrics, and Surgery, a pilot program was developed and successfully carried out over the past year. After careful review of the initial programs materials, schedules, and performance outcomes, a revised and up-dated program has been undertaken. Arrangements for and establishment of criteria to be used in testing the transportability of the program within other health science clinical areas are underway.

The resident training program involves the active participation of self selecting residents for a five week period or approximately 20 hours of independent and group study. While most of the activities have been structured around a four hour-per-week commitment on the part of residents, each activity can be accomplished on the service of the resident, and at a time convenient to the participant. The program model encompasses several special features including: individualized instruction, self pacing, quantitative and qualitative observation techniques, minimal cost, involvement through experiential activities, modular and content flexibility, dynamic utilization (continued post-program application) and the capability of program transportability to other professional schools.

## Rationale for the Program

In medical student teaching in the clinical setting there is little doubt that the most frequent student-teacher contact occurs between a medical student and a member of the resident staff. The teaching of medical students by house staff takes place on patient rounds, in the Emergency Room, in the out-patient clinic and the operating room, but only rarely in a formal teaching setting. Few attempts have been made to establish the percent of teaching received by a medical student from the house staff as compared to faculty. One consistent finding in the studies reported is that a relatively large percent of the information received by medical students comes from house staff, yet only rarely have attempts been made to educate the house officer in his role as teacher, despite his primary importance in this role.

While there have been a fair number of studies dealing with the identification and classification of either observed or "ideal" clinical teaching

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behaviors, few programming attempts have been made to assist faculty and staff in instructional skill improvement. Those programs which have attempted to improve instructional effectiveness have generally received criticism for their lack of practicability and applicability, poor delivery techniques, i.e., lecture, and use of unfamiliar jargon and theory concerning pedogogy.

In order to assess house staff attitudes toward instructional improvement, their perceived strengths and weaknesses in teaching, and their time commitments given to certain responsibilities within the clinical setting, a survey of 98 residents was conducted. (Tables 1 and 2) Residents surveyed felt both a strong need for and willingness to participate in a skills improvement program if the time and activity schedules were reasonable. In addition to providing a Prioritized skill weakness listing, which identified, 1) instructional effectiveness feedback, 2) making use of instructional aids, and 3) student motivation, as high concern areas, the survey helped to document the fact that approximately 13 percent of the resident's time is spent in medical student instruction. It was felt that this estimate was probably low however, since "patient care activities" might also include a high involvement of student participation.

Methodology

In response to the need assessment Survey of House Staff Attitudes Towards the Teaching of Medical Students, residents were selected from three clinical departments for developmental and initial pilot program activities. Their assistance, early in the project, aided in model formation, devising appropriate evaluation strategies, and in materials selection and refinement. The program has made a very real attempt to deal with the many situational constraints that house staff must cope with in a clinical setting, and through the use of specially devised observational and evaluational tools, has provided a model for documenting instructional skill improvement. A four category skills classification scheme is introduced early and is used throughout the program. The basic objectives and activities, as provided to the resident early in the program, are cited in Table 3.

In an effort to assess the "state of the art" of each resident's current teaching style and technique, an initial videotaping of a typical clinical teaching session took place within the residents' invironment, e.g., teaching rounds, small group discussion, lecture, etc. This first videotape serves two purposes: 1) as a practice tool for the teaching-evaluation-technique developed for use in the program, and 2) as a pre-post program skill level assessment made by both the resident and the project staff.

After each resident has completed the initial videotaping, a total group meeting is held. During this meeting the residents receive a complete rationale for the program, its goals and objectives, and its potential for future use in the College of Medicine and off-site hospitals. Devised primarily within an individualized learning format, both the Participant Guide and associated program materials are distributed to the residents at the first group meeting. It is intended that the "Packaged" nature of the program will permit each resident to schedule his or her own time with a limited amount of contact required on the part of the project staff.

The program has been structured to allow completion within five weeks if the average weekly activity is followed, or within a time period realistic to the resident in a particular department, division, and service.

TABLE 1

CLINICAL INSTRUCTION ATTITUDE SURVEY

RESIDENT SAMPLE:

| | | AGREE AND STRONGLY AGREE |
|---|---|---|
| PEDIATRICS: | N - 21 | |
| SURGERY: | N - 27 | |
| MEDICINE: | N - 50 | |
| TOTAL SAMPLE | N - 98 | |

| | | |
|---|---|---|
| 1. | ONE OF THE MORE IMPORTANT RESPONSIBLITIES OF THE RESIDENT IS THAT OF TEACHING MEDICAL STUDENTS. | 87% |
| 2. | RESIDENTS ARE MORE SUITED FOR TEACHING MEDICAL STUDENTS THAN ATTENDING STAFF. | 19% |
| 3. | EVALUATING MEDICAL STUDENT PERFORMANCE IS PART OF THE RESIDENTS' RESPONSIBILITY. | 91% |
| 4. | PART OF THE RESIDENTS' RESPONSIBILITY IS TO PROVIDE A MODEL OF PROFESSIONAL BEHAVIOR. | 97% |
| 5. | MOST HOUSE OFFICERS ARE AWARE OF THE CURRICULAR DIFFERENCES BETWEEN THE INDEPENDENT STUDY PROGRAM AND THE REGULAR LECTURE-DISCUSSION PROGRAM. | 13% |
| 6. | MOST MEDICAL STUDENTS HAVE DIFFERENT LEARNING STYLES AS WELL AS ABILITIES. | 92% |
| 7. | RESIDENTS COULD BENEFIT FROM MEDICAL STUDENT FEEDBACK ON THEIR TEACHING EFFECTIVENESS. | 93% |
| 8. | MY TEACHING IS USUALLY WELL ORGANIZED. (I FOLLOW A LOGICAL PLAN, WRITTEN OR NOT, IN PRESENTING MATERIAL). | 43% |
| 9. | MANAGING MEDICAL STUDENTS' CLINICAL LEARNING EXPERIENCES IS EASY FOR ME. | 48% |
| 10. | I ENJOY WORKING WITH AND TEACHING MEDICAL STUDENTS. | 89% |
| 11. | STUDENTS LEARN CLINICAL MEDICINE BEST IN FORMAL LECTURES. | 83% |
| 12. | THERE IS USUALLY MORE THAN ONE BEST WAY TO EFFECTIVELY TRANSFER INFORMATION TO STUDENTS. | 96% |
| 13. | BECOMING TOO FRIENDLY WITH A MEDICAL STUDENT INTERFERS WITH EFFECTIVE TEACHING. | 71% |
| 14. | METHODS USED TO TRANSFER INFORMATION TO STUDENTS IN A CLINICAL SETTING DIFFERS FROM METHODS USED IN A CLASSROOM SETTING. | 86% |
| 15. | MEDICAL STUDENTS USUALLY KNOW WHAT I EXPECT OF THEM. | 62% |
| 16. | I AM GENERALLY ABLE TO COMMUNICATE MY IDEAS VERY EFFECTIVELY. | 67% |
| 17. | THERE SEEMS TO BE ENOUGH TIME SPENT IN CONTACTS BETWEEN HOUSE OFFICERS AND MEDICAL STUDENTS. | 66% |
| 18. | MANY RESIDENTS COULD BENEFIT FROM A PROGRAM WHICH IMPROVES TEACHING SKILLS. | 67% |
| 19. | I FEEL THAT MY TEACHING SKILLS COULD BE IMPROVED. | 89% |
| 20. | I WOULD BE WILLING TO SPEND A REASONABLE AMOUNT OF TIME LEARNING HOW I MIGHT BECOME MORE EFFECTIVE AS A TEACHER OF MEDICAL STUDENTS. | 58% |
| 21. | IF I WERE TO PARTICIPATE IN A TEACHING SKILL PROGRAM I WOULD BE WILLING TO PRACTICE OR TRY OUT TEACHING TECHNIQUES WHILE WORKING WITH STUDENTS. | 71% |
| 22. | THE OPINIONS OF MEDICAL STUDENTS ON HOW TO IMPROVE CLINICAL INSTRUCTION WOULD BE OF LITTLE USE. | 20% |
| 23. | I HAVE HAD SOME FORM OF STRUCTURED EXPERIENCE OR FORMAL TRAINING IN TECHNIQUES, METHODS, THEORIES, PROBLEMS, OR PRINCIPLES OF INSTRUCTION. | 22% |

TABLE 2

CLINICAL INSTRUCTION ATTITUDE SURVEY
(con't)

A. Priortized concerns within the mileau of clinical instruction based on the response scale:

0 = this area presents little problem for me in clinical teaching
1 = this area presents some problem for me in clinical teaching
2 = this area presents a real problem for me in clinical teaching

| | | | |
|---|---|---|---|
| 9 | evaluation of student performance | 2 | making use of instructional media and materials |
| 11 | presenting topical material in a well organized fashion | 1 | knowing how effective my teaching is |
| 13 | effective verbal communication | 7 | maintaining objectivity toward students |
| 8 | managing students experiences in clinical medicine | 5 | physical settings being appropriate for good teaching |
| 10 | asking and answering questions at the appropriate level for student understanding | 14 | sketching visual materials on chalkboard or note pad |
| 12 | medical student personalities and attitudes | 4 | attending staff attitudes toward teaching |
| 3 | motivating students | 6 | nursing staff attitudes toward teaching |

B. Average time commitments given to specified clinical activity, as a resident.

| | | | |
|---|---|---|---|
| 1 | (44%) patient care | 3 | (13%) teaching medical students |
| 4 | (5%) research | 3 | (13%) scut work |
| 2 | (16%) self learning | 4 | (5%) wheel-spinning |
| | | 5 | (2%) other _____ |

TABLE 3

PROGRAM OBJECTIVES AND ACTIVITIES

| SCHEDULE | BASIC OBJECTIVES | SPECIFIED ACTIVITY | TIME |
|---|---|---|---|
| PRE-WEEK 1 (.5) | TO GAIN THE EXPERIENCE OF BEING VIDEOTAPED DURING A TEACHING SESSION AND TO PROVIDE A SAMPLE OF INSTRUCTIONAL SKILL. | SCHEDULE AND EXECUTE A 10-15 MIN. TEACHING SESSION PRIOR TO WEEK 1. (I) | (.5) |
| WEEK 1 (4) | TO OBTAIN CLARIFICATION OF PROGRAM GOALS AND INTENTS. | GROUP MEETING (G) | (1.5) |
| | TO INCREASE AWARENESS TOWARD THE ROLE OF THE RESIDENT AS A TEACHER. | REVIEW OF CLINICAL INSTRUCTION ATTITUDE SURVEY AND SELECTED ARTICLES ON TEACHER ROLE (I). | (1.5) |
| | | REVIEW CLINICAL INSTRUCTION VIDEOTAPES (I). | (1) |
| WEEK 2 (5) | TO BECOME FAMILIAR WITH THE TECHNIQUE OF MICROTEACHING AND A SKILL CLASSIFICATION SCHEME | GROUP MEETING (G).<br>DISCUSS MICROTEACHING TECHNIQUE<br>DISCUSS TEACHING SKILLS<br>DISCUSS LESSON ORGANIZER | (1.5) |
| | TO BECOME FAMILIAR WITH A SKILLS CLASSIFICATION SCHEME AND LESSON PLANNING MATERIALS AND METHODS. | REVIEW OF SELECTED ARTICLES ON MICROTEACHING (I). | (1.5) |
| | | REVIEW MICROTEACHING TAPES DEMONSTRATING TEACHING SKILLS. | (1) |
| | | DEVELOP A TEACHING PLAN THROUGH USING THE MICROTEACHING LESSON ORGANIZER (I). | (1) |
| WEEK 3 (3.5) | TO BECOME FAMILIAR WITH THE "TEACHER EVALUATION TECHNIQUE". | GROUP MEETING (G)<br>DISCUSS MICROTEACHING EVALUATION TECHNIQUE<br>REVIEW PRE-PROGRAM TEACHING TAPE. | (2) |
| | TO PARTICIPATE IN A MICROTEACH TAPING AND PERFORM A SELF EVALUATION. | PREPARE AND CONDUCT A 10 MIN. MICROTEACH (I) | (1) |
| | | REVIEW AND EVALUATE TAPED SESSION (I) | (.5) |
| WEEK 4 (3.5) | TO PARTICIPATE IN A MICROTEACHING GROUP REVIEW AND EVALUATION SESSION. | GROUP MEETING (G)<br>REVIEW MICROTEACH SESSION #1 | (2) |
| | TO PARTICIPATE IN A SECOND MICROTEACH TAPING AND PERFORM A SELF EVALUATION. | PREPARE AND CONDUCT A SECOND 10 MIN. MICROTEACH (I) | (1) |
| | | REVIEW AND EVALUATE TAPED SESSION (I). | (.5) |
| WEEK 5 (3.5) | TO PARTICIPATE IN MICROTEACHING GROUP REVIEW AND EVALUATION SESSION. | GROUP MEETING (G).<br>REVIEW MICROTEACH #2 | (2) |
| | PROGRAM REVIEW. | SESSION AND PROGRAM REVIEW(G) | (1.5) |

(20) HOURS (G) - GROUP EFFORTS (I) - INDIVIDUAL EFFORTS

Provided within the Participant Guide is a section discussing the important role of a resident as a clinical teacher. Several excellent articles, concerning teaching within the medical environment have been selected and recommended for general information for house staff. Also, included are references to videotapes of several selected faculty and resident teaching sessions within a variety of typical clinical teaching settings. Although these videotaped segments are not intended to represent examples of either good or bad teaching, they do represent various types of clinical teaching that presently take place. Videotape Playback units are located within each of the hospitals' Learning Resource Centers (LRCs). The LRCs, conveniently located and easily accessible to house staff, attendings, and medical students, are equipped with all the program materials needed to complete the program.

It is during the second week of the program that the resident is introduced to microteaching. A brief description of the concepts and distinguishing characteristics of microteaching, and an introduction to the types of teaching skills to be chosen for use within a microteaching session is presented. Each resident is referred again to the LRCs to review selected videotapes on microteaching, and the demonstrated use of the four major teaching skill areas to be focused on during the program. (presentation/organization skills, questioning skills, motivation and attending skills, and communication skills/teaching styles and attitudes) A detailed explanation of the four teaching skills areas is provided within the Participant Guide, with definitions, references and example descriptors of various subcategorical skills. One of the key objectives for the first two weeks' activities is to increase each participants awareness toward their own particular role as a clinical teacher.

When the resident has demonstrated familiarity with the definitions of the basic teaching skills he is introduced to the program's Observation and Rating Technique. A group meeting is scheduled to present the methods which will aid each resident in becoming skilled observers of teaching techniques. A quantitative rating system has been developed which assigns a value to each skill that has been observed. From this value-assignment a teaching skill profile is created. The teaching skills profile can be useful in comparing one's current teaching skills with previous profiles; thus a picture of the residents' teaching skill can be generated over time. The overall goal of this week's activities is to become familiar with the teaching skills calssification scheme and lesson planning methods and materials. Specific participant activities have been carefully designed to permit each resident to achieve maximum success.

Depending upon the residents' preparation, the first of two 10 minute microteaching sessions can be scheduled. After each micro-teaching experience, the residents observe and rate their own videotape. The project staff then meets with the participants for peer review and evaluation. At the completion of the two micro-teaching sessions, a final group meeting is scheduled with each resident in order to obtain the necessary recommendations for change and improvement. Again, specific program goals and objectives are met. Each participant has experienced a minimum of two micro-teaching sessions and has carried out a self assessment of his efforts.

The culminating activities in the Resident Training Program involve a group meeting with project staff and participants to review and evaluate the individual micro-teaching sessions. Each resident has an opportunity to review and evaluate the progress made during the past five weeks. The final group meeting serves the purpose of program review.

## Conclusions

The overall goal of the Resident Training Program has been to increase each resident's awareness of his vital role as a clinical teacher by providing individual teaching experiences which permit opportunities for residents to plan, observe, evaluate, and rate his current teaching skill in order to enhance his or her teaching abilities. The results of the program have been most encouraging. It is the intent of the project staff to transport the Resident Training Program to an off-site hospital for implementation and validation.